

73 MAGAZINE

FOR RADIO AMATEURS

Antennas Galore!

The 20-W Fun-Amp

Surviving the
Unthinkable

Outpost at Kingman Reef



Pacific Odyssey

— the Kingman/Palmyra adventure

Kingman; Palmyra. For most hams, these are names which simply mean two new countries, new callsigns, necessary on the road to the DXCC Honor Roll. But to me, Kingman/Palmyra means the most physically demanding and mentally trying of all the DXpeditions I've ever

taken part in. Located nearly one thousand miles south of the Hawaiian Islands, these uninhabited coral islets are among the most remote and difficult places to get to in the world.

Born out of a rag-chew session between Harry Mead VK2BJL and myself while my ship, the sailing

yacht *Banyandah*, was en route to Japan early in 1980, Kingman/Palmyra (K/P) was to be just one of many DX locations planned in a grand transpacific DXpedition spree for 1981. Originally, Harry (of Mellish VK9ZR and Spratly 1S1DX fame) was to organize operators, licenses, and finan-

cial backing for a series of DXpeditions through the Pacific. Locations would include Kingman/Palmyra, Samoa, Tokelau, Kermadec, and a grand finale back where it all began, Mellish Reef.

During numerous rag-chew sessions spanning most of 1980, our plans



The ultimate Field Day site? AD0S/KH5/K.

solidified; *Banyandah* was to sail to Hawaii early in 1981, outfit herself with complete base-camp equipment, and be ready for the first group of operators by spring. Unfortunately, Harry's time to organize such a massive undertaking diminished as his electronic repair business in Sydney grew, and by late 1980 it became obvious that he would not be able to help on the first leg of this epic adventure.

At that time, the thirty-eight foot *Banyandah* was in the mid-north Pacific, battling heavy seas and gale-force winds on an early-winter crossing from Japan to Hawaii. It appeared that K/P would be an all-American operation, so I turned to my good friend, Karl Jensen KJ7B, in Seattle for help. With his usual efficiency, Karl put the word out through all the DX clubs and bulletins while spreading it across the airwaves. The initial response for the three operators needed was terrific; within a week he had a two-page list of potential candidates. But these glad tidings were short-lived; after the full requirements were explained to each candidate, all but two dropped out. To some, the three-thousand-dollar financial commitment was too steep (although as full-scale DXpeditions go, it was cheap). But to all, the real problem lay in the enormous time required to complete the two operations and make the 2,300-mile voyage. Not many people can afford thirty-five to forty days away from family or employer.

Upon our arrival in Honolulu in early December, we still had only two operators willing to challenge K/P. One, the eventual DX King of Kingman, was a quiet, family man from Minnesota. George Carleton ADØS had a burning desire to try his hand at big-

time DXing. In our chats, enthusiasm seemed to ooze from his every rf wave. He was a social worker at one of the state hospitals back in Bremer, Minnesota. A plodder, a converted CB operator, he took to the challenge of DXing like a big gun from W6-land. George and his friends outgrew the local radio club when they met resistance for more DX activities. They formed their own club, the Paul Bunyan Wireless Association, immediately entered every club contest around, and offered night courses for future hams.

George and I were so diametrically opposite in backgrounds that we immediately formed a fast friendship. While I've always been a globe-traveling gypsy, working and living in almost every part of the world, George had never left his native mid-America. He married his childhood sweetheart, stuck with his original employment, and carved a homestead out of thirty acres of rural forested land.

The other operator, the third corner of the triangle, was a fine and proven contest operator from California. Kingman was his dream and an allband operation his goal. More about him later.

As the New Year rolled in, *Banyandah* lay under the highrises at Waikiki and we still had four months of preparations before us. A daily planning session was set up on 15m, with Karl KJ7B acting as the group's central coordinator. Tasks were assigned, with one operator to solicit equipment from manufacturers, the other to solicit financial aid and sponsors. My wife, Judith, and I started the laborious chore of purchasing the numerous supplies and modifying our ship to hold them.

For the base camp, we purchased two large Coleman tents, three folding



From left to right: George ADØS, Judith Binder, the author, and Bill W6HTH, aboard the S.Y. Banyandah before departing for Kingman.

tables and chairs, a propane cooker, pots and pans, dishes, water containers, sleeping bags and air mattresses, flashlights and internal lighting, all with spares and backups. In other words, our list included everything necessary to exist on a bare pile of shells in the middle of the ocean. On the critical power plant side, we chose the best: two Onan 2.5-kW portable gasoline generators modified especially with automatic oil feeders. They were expensive, but they came with built-in fuel pump, oil pressure pump, and a robust cast-iron engine. A selection of spares also was taken so that any breakdown could be remedied, including a broken crank rod. Hundreds of other items also were loaded aboard for the

base camp: large-capacity plastic fuel drums, funnels, fuel transfer pumps, separate power leads for each station, and home-made twenty-seven foot push-up towers with four-foot long stainless steel anchoring stakes.

And let's not forget the food. Case after case came aboard as Judith returned from her forays into Honolulu's markets. Can you imagine the quantity and variety necessary to feed five adults plus our two children for five weeks without a supermarket in sight for a thousand miles?

On the electronics side, matters were not progressing as smoothly. Manufacturers' budgets were getting tighter and tighter. In the past, outright donations



Go to Hawaii and take a left—Kingman is the first atoll on your right.



Bill W6HTH/KH6 and the author's sons, Jason and Jerome, relax in the Pacific sunshine.

could have been expected—or at least the loan of equipment—but this year all the major equipment producers were willing only to sell their goods at dealer cost. We were still short the third operator, and hence money was tight. George suggested that he buy one Wilson tribander, the System 33 with 40m add-on on the condition that the next group, the ZM7 group, purchase a similar beam; then both groups could share them. For a third antenna, one for low-band operation, George would bring his DenTron doublet. By March, all equipment except the transceivers was either on board or en route.

As one equipment manufacturer after another refused our requests for the loan of equipment, George offered to break down his home station and send it along with borrowed equipment from his newly-formed club. A generous offer; after all, anything can happen to sensitive gear carted halfway around the world by airplane, sailing yacht, and dingy. Not to mention the hazards of operating it in an exposed salt-laden environment under the rigors of portable power. But equipment was needed, or we wouldn't be going anywhere.

One night George started thinking about how this ex-

pedition was shaping up to be an all-American DXpedition. We had Onan generators, Coleman tents, Wilson antennas, and American operators—and Kingman/Palmyra is American. The light must have blinked on in his brain, for early the next morning he contacted the Ten-Tec Corporation in Tennessee and put forth his request. At last we had found a manufacturer eager to help, for they offered the outright loan of three complete stations with power supplies and outboard vfos in their Omni-C range. Like a runner clearing the final hurdle, we all let out a collective sigh of relief. A departure date was set, air travel tickets were purchased, and *Banyandah* loaded aboard the last supplies: gasoline, diesel fuel, and engine oil.

We were now a going concern. Permissions had been granted and every bit of gear had been arranged, but we still had only two financial members, neither of whom could afford a red cent more. As a last ditch effort, an alternate financial arrangement was offered: *Banyandah* would chip in the remaining third share on the proviso that the boat be paid back first from any forthcoming contributions. This was applauded as an excellent solution and was readily ac-

cepted by the other two members.

I must admit that I was not as enthusiastic about it as the others since our past DXpeditions had always been straight-out charters. But my wife and I are avid adventurers who get personal satisfaction in overcoming obstacles—and we're a little DX-mad to boot. We had a sincere desire to see the K/P duo reactivated. Besides, we firmly believed that the amateurs of the world would support our expedition—a mistaken belief which proved costly.

All went well for several weeks; George chopped extra wood to warm his house in his absence, the other operator cleared his desk, and we took a much needed rest with our two young sons—for we had been on the go since our grueling, forty-five-day crossing of the north Pacific.

When the disaster struck, it fell like a meteorite from the heavens. Our California operator dropped out when there were only two weeks to go before departure. Great! Thousands of dollars and hundreds of hours of labor and planning down the drain since two men cannot set up DX stations at a place as dangerous and physically difficult as Kingman, nor can they

operate and survive with one man ashore and the other minding the boat.

We definitely had a serious problem! George's reaction was as I expected: "We'll do it alone!" His faith was like an injection of adrenaline into my waning spirit. But in the end it was a Honolulu amateur who came to our rescue. Bill Boykin W6HTH/KH6 already had stood by us during the hectic preparations in Honolulu. He had helped coordinate and track down equipment; he had run errands and loaned us his car for the months that it all took.

Bill, a retired old salt from the Navy, is an ex-electronics technician who had been stationed in many a foreign port. He was not the typical DX hound since his true love was six meters. But as each new item was stored aboard, I could see the dream germinate and grow in his eyes: a long sea voyage across the balmy trade winds to a wild and rarely visited patch of land, the excitement of setting up the beams and stations, and, the topper, his six-meter beam proudly atop the tallest tower! Time wasn't his problem, but money was. He could not offer any financial support, so instead he readily volunteered his time, muscles,

**“all other gear gave us trouble...
the TEN-TECs just kept working great.”**



1981-82 Trans Pacific DX Expedition used TEN-TEC OMNI-C transceivers.

**KINGMAN REEF, PALMYRA, TOKELAU —
33,000 contacts without a miss.**

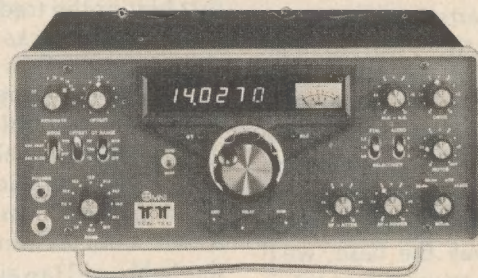
As George Carleton (ADØS ex KH5K) said in a letter to TEN-TEC... “12,100 QSO’s from Kingman, 8100 for me, 3100 in the first sitting with the rig on a continuous 33 hours except for 2 minute gas breaks... all other gear gave us trouble due to salt spray — the TEN-TECs just kept working great.

“This is the most QSO’s ever from Kingman and all were barefoot. A few times generators ran out of gas during rainstorms with rigs operating on TX... no problem with voltage drop, and no damage. No tuners were used... only your rigs and (antennas). The wind blew continuously from 20 knots to 50-60 knots and we literally had to open the tent to let the rain out, salt water and spray everywhere, watches quit, keyers and linear (other brands) quit after the first QSO — arcing due to salt spray, but the TEN-TECs never even got warm when the tent was around 100°F.

“... American gear is best.”

The TEN-TEC OMNI-Cs went on to serve on Palmyra and Tokelau with equally impressive results and we thank the group for their letters—we couldn’t have said it better.

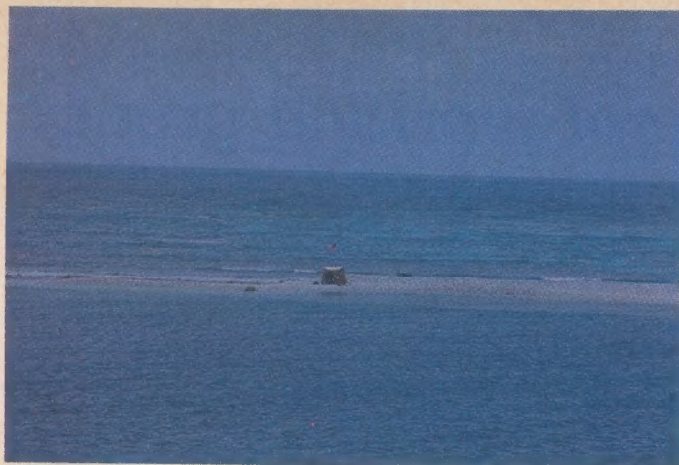
**See your TEN-TEC dealer
for the great All-American
transceiver — TEN-TEC OMNI-C.**



**The spectacular performance of the TEN-TEC OMNI-C
results from these fine features:**

- 9 hf bands • Total solid state—from the pioneer • Broadband—from the pioneer • 3-mode, 2-range offset tuning—receiver, transmitter or transceiver • Optimized receiver sensitivity • Greater dynamic range • Optimized bandwidth—seven response curves—up to 16 poles of filtering • Notch filter • Noise blanker • “Hang” agc for smoother operation • Full or semi break-in (QSK) • WWV reception on 10 MHz band • Digital readout • Separate receive antenna input • Automatically switched S/SWR meter • 200 watts input all bands • VOX and PTT • Phone patch jacks • Zero-beat switch • Adjustable volume and pitch sidetone • Adjustable threshold ALC • Front panel band switch also controls linear or antenna • Automatic sideband selection • Super audio quality—less than 2% THD • Impeccable signal—exceeds FCC requirements • High stability—less than 15 cycles change per degree F temp. change • High articulation keying—set to 3 msec. rise and decay time • Compression loaded speaker • Plug-in circuit boards • Operates on 12-14 V dc mobile, 115/230 V ac with external supply • Made in U.S.A. by pioneers in solid state amateur radio—TEN-TEC.

TEN-TEC, INC.
SEVIERVILLE, TENNESSEE 37862



The "country" of Kingman is about seventy-five yards long and towers five feet above sea level in calm weather.



Accommodations on Kingman Reef were anything but luxurious, but George and Bill didn't seem to mind.

and skills, and replaced our California operator.

With that I faced another difficult decision: *Banyandah* lay at the dockside fully equipped and ready to go; our dollars and hours of labor had already been expended, but financially we were in a mess. What should I do? Our now-dropped-out operator was to have arranged sponsors, and now there was no time. I had had no experience with the returns from QSL cards but believed (like so many) that a green stamp per envelope was the minimum to be expected. Well, if that was the case, we'd just have to work that many more stations.

The night of April 7th was cool and clear; the twin volcanic peaks of Mauna Loa and Mauna Kea stood behind us, finely etched by the intense curtain of starlight. At their base, where the sea greets these giants, lay the tiny pleasure-boat harbor of Honakahou, carved out of a solid river of lava. *Banyandah* lay at dockside like a fine race horse waiting in the gates. A child-like atmosphere of excitement and anticipation prevailed as the last baskets of papayas, pineapples, and stalks of bananas were lashed into place. A final tug on the ropes securing the drums of gasoline, and everything was secure. The

ship's diesel engine was started, roaring into life and shattering the quiet loneliness of the basin. George and Bill dropped the mooring lines and, amid the shouts of "Bon Voyage!", "Safe journey!", and "Good DXing!", *Banyandah* glided smoothly away.

Sweet, cool air was the first hint of the trade winds. Each gust was a bit stronger, and when *Banyandah*'s lee rail dipped, the engine was secured. Finally, it was time to relax. The boat's automatic wind-steering device was holding a true course south while the lights of Hawaii's Kona Coast diminished astern. At last we were under way, severed from civilization. The memory of the months of toil and frustration seemed to melt with the miles passing under our keel.

The smooth, fast movement of the boat, the black sky bright with stars, and the sea glowing with amazing bits of bioluminescence created a mood so perfect, a mood which lasted the entire voyage, that success could be tasted in the air. We chatted the night away, George and Bill both refusing sleep for fear of losing the magic of the moment. Judith, the more practical one, helped our children (Jason and Jerome) get to

bed and then brewed a fresh pot of coffee for the night watch before turning in. Our normal routine was to split the long night hours into two watches, dusk to midnight and midnight to dawn. During the daylight hours, watches were more relaxed as the world's commercial shipping has a better chance of seeing our tiny craft.

At daybreak, Ka Lae, the most southern point of the United States, could just be seen through the haze, while the ship's log held steady at six and a half knots. By 1000 hours, we had our last sight of land and we were completely alone, a white dot at the center of a disk of blue.

Days merged into nights and back into day, each the same and yet somehow quite different. We had time to study each cloud, each wind swell; we had time to talk or to be alone with our private thoughts. We caught fish on our constantly trailing lure—mostly small bonito. But sometimes a powerful dolphin fish, a mahimahi, would strike and the battle would be on. This fine-tasting fish with its firm white flesh would battle with all its immense strength until at last it could be hauled aboard flapping and jumping, changing its body color

from yellow through green to an electric blue until death took it and it turned to silver.

Each noon, after my celestial sight, I would plot our position on the chart. Each day, the tiny dot marking our position would inch its way closer to the cross marked Kingman Reef as jumps of 136 miles, 138 miles, and, once, 144 miles were plotted. After seven full days of sailing, we were only fifty miles away from our goal. The week had been perfect: fifteen-knot northeast winds, sunny days, and starry nights. No ships, airplanes, or other man-made objects had been sighted.

Originally, we had set sail for, first, the palm-clad islands of Palmyra, and then Kingman, since finding that five-foot-high speck after a one-thousand-mile ocean voyage would require perfect conditions and the utmost skill. But Kingman was the real challenge. And by the halfway point, George had convinced me that it required a fresh and eager group to do it justice and should come first. I altered our course to make the attempt. But on that last evening, alone on watch, as the sky darkened with the approach of rain clouds, I began to doubt the wisdom of my choice.

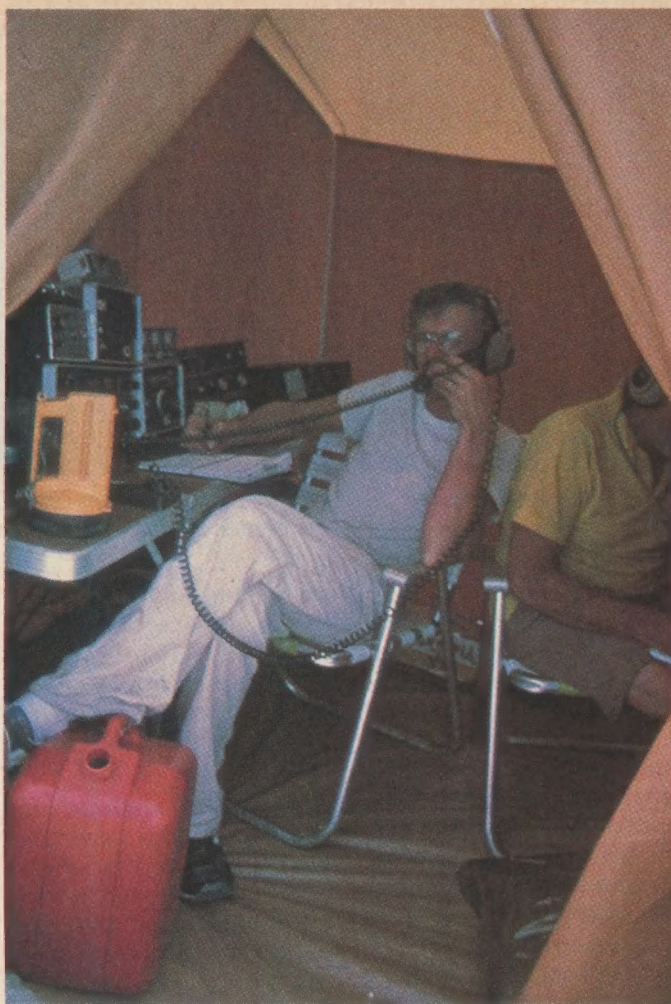
Ocean currents are

strange forces. For thousands of miles they will remain constant, flowing in one direction at a reliable rate, but upon an approach to land, with the sea bottom suddenly rising, they become unpredictable. To make matters worse, somewhere in this area we would leave one current and enter the world's strangest current, the equatorial countercurrent. This narrow band of water defies all sense by moving directly opposite to the normal trade winds. Its northern limit shifts back and forth across the region at a whim of some unseen force, causing distress among all ship captains who sail this area. Normally, a very wide berth would be given to Kingman, but it was my job to find it safely.

Soon the wind freshened and swung ominously to the southeast. Rain began to fall. It increased until my vision was down to a scant fifty feet. But *Banyandah* heedlessly sailed on, blindly cutting through the water while closing the distance between us and one of this ocean's worst navigational hazards. As the miles ticked off, I held my breath and prayed that my instruments and sights were correct and that our luck would hold. Every few minutes I poked my head above the spray dodger and peered into the rain and gloom, expecting to see that flash of white signalling breakers and destruction.

By 0400 hours, I had had enough and dropped the headsail and mizzen. Quietly, the ship came into the wind, gently rocking in the swell. I woke Judith and crawled into the bunk. "Wake me if the stars show," I said, and immediately fell asleep.

Just before 0600, I was up again. The storm had passed and the first tinges of pink lit the eastern horizon. Quickly Judith and



George ADØS, making one of the 12,176 KH5/K QSOs.

I measured the angle between horizon and our favorite navigational stars, jotting down the exact time of each sight. My voice calling out "Mark!" at each sight must have woken George and Bill; sleep was still in their eyes when they crawled out of the stern cabin. George scanned the blank horizon and said with a grin, "No trees in sight yet." And we all laughed since this was the Minnesotan's usual way of greeting a new day at sea.

The star sights didn't take long to work out and showed that we were still thirty miles from that danger which had seemed so near in the rain and the dark. The current had worked its magic and had pushed us away instead of closer. The wind had gone with the passing rain, leaving a calm sea and a bright

hot day. Now under power, we continued on a new heading. A scum line was passed—a convergence of currents trapping bits of floating plastic and discarded light bulbs, all alive with small crabs and tiny fish. All morning I tracked the sun with my sextant, and my chart became a mess of intersecting position lines, each a bit closer. By the time the sun reached its azimuth we were very close, and conditions were perfect for a landing.

At 1300 hours I climbed our forty-five-foot mast and scanned the horizon. The sea was flat and calm, the horizon sharp but empty. At 1400, with (supposedly) only six miles to go, I climbed again. There! Just near the edge of the world a vague splash of white showed for a moment and I couldn't believe my luck.

The breakers of Kingman Reef were in sight! At deck level, the rest of the crew jumped up and ran to the rail, but nothing could be seen. For the next hour they strained for their first glimpse. Finally, with only two miles to go, George let out a whoop of delight. The rest happened fast. One moment a flat sea, the next a long line of small breakers off our beam and the sea changed from deep blue to aquamarine. Coral heads seemed to rush up to meet us. As we crossed the sunken reef, they were plainly visible even though the depth meter recorded seventy-five feet.

Portable KH5/K first appeared as a heap of brilliant yellow-white sand, sterile and completely devoid of vegetation. The ridge of fine coral rubble and upturned coral boulders was the result of thousands, maybe millions, of years of the sea crashing against the outer barrier reef and washing the broken bits of coral and dead shells into a pile. Excitement ran high as we toured the area in the lee of the cay, taking soundings for anchoring.

It was then that we met the first evidence of Kingman's wildness. Although the depth recorder showed a steady bottom, it was over two hundred feet down! And it was all the same, right up to the perpendicular cliff of reef. At a quarter mile off, I said a silent prayer and lowered the anchor down into the blue, paying out every inch of warp, shaking my head as it slithered over the bow rollers and disappeared from sight.

The cay seemed to grow smaller instead of bigger as we approached in our ten-foot aluminum dingy. Soon it could be seen that its side was steep and not the long gentle slope we had first seen. Kingman was not smooth sand but an im-



Land ho! The good ship Banyandah makes for a landfall on Palmyra.

mense pile of six-inch-wide clam shells bleached white by the intense tropical sun. By crawling on all fours we reached the summit, and my heart sank even further when I realized that this forsaken pile of shells went hardly six feet across at the top before tumbling down again into the sea.

We walked the full length of the cay—all seventy-five yards of it. Decomposed bits of wire and the remains of a vertical's base marked the spot of the last DXpedition, probably Kingman's last human visitors. On the northwest end, nature had scalloped out a hollow with a flat area about ten feet square, backed by a near-vertical wall of shells and large coral rock. It looked tailor-made for the smaller of our two tents. Its only threat was the water, which lay only two feet away. Was this high or low tide? A quick look at the debris line indicated that it was nearly high. I mentioned that the hollow might be swept by swells if the sea got nasty. George's only comment was that he didn't mind getting his feet wet as long as he stayed on the air. And so the smaller tent was set up there—a move which later proved to be a key to our success.

Tropical night comes quickly, and the fiery reds

and oranges of twilight are short-lived. Soon it became impossible, even dangerous, to carry on in the half-light, and reluctantly we returned to *Banyandah*. Once "home," Judith prepared a celebration landfall and birthday dinner, for we just happened to land on her birthday, April 15th. A special dining table was set up in the cockpit and all our "at anchor" crockery was laid out. That night we rode a wave of euphoria.

At dawn the next morning, the boat came alive as we began the back-breaking job of hauling equipment ashore. Each item was unloaded into one of three piles: power, tent, or antenna. By mid-morning the bulk of it was there, and Bill and George started assembling the beams while I lugged generator supplies to the top of the ridge and established the power plant. For a while, Jason and Jerome ran little errands, but boredom set in and they disappeared down the cay, running from one pile of flotsam to another, beachcombing the most untouched beach in the world.

They returned dragging a large pink fishing float and a long barnacle-encrusted length of bamboo. Thirty minutes later Old Glory was raised, fluttering proudly from its bamboo



The base of operations on Palmyra was the green building at the center of this idyllic scene.

staff supported at the surf line by a pile of dead coral boulders. Little did we know that storms were to snap that staff like a match stick three times before we left!

Noon was approaching, and the day was becoming alarmingly hot and airless. Worst of all, our ankles started to swell and turn black and blue from numerous painful jabs from the saucer-shaped shells. We cautioned each other about heat exhaustion, but DX fever was growing inside of us. The tribander with the 40m add-on was put right out in the low-tide area of the reef. The other tower held both a tribander and the six-meter beam. Raising it was a hellish job, and several moments of near-disaster passed before the guys were finally secured. The rest went much like any Field Day back home. The two stations were set up, coax and power connections were made, and the beams were checked for swr. Everything looked fine; Kingman was ready.

At 0057Z April 17, George made the first contact using the callsign AD0S/KH5/K. A huge grin spread across his face as he spoke on 15 meters with his life-long friend Mike AF0T, back in Bremer, Minnesota. Mike surely deserved that first contact. He was an un-

seen member of our team whose cheerful encouragement and traffic patches eased the loneliness of the thousands of miles.

After Mike it was first come, first served. Immediately the pileup swelled into a gigantic opening day beast, and George's eyes bulged with the onslaught of decibels. The last Kingman group had not lasted long, and no one was going to miss this chance. George lit a fresh cigarette, let out a deep sigh, and called, "QRZ, Kingman Reef calling."

We had never planned our on-shore operation. In the first place, plans and schedules seldom work out when you are at a really rare and hard-to-get place. All we knew was that George was to be the king DXer. It was obvious; Bill had never beat his way through a pileup before and had come along to help set up. And although I had been on several really big DXpeditions, I had always been too busy running supplies, maintaining equipment, and minding the boat to do much operating.

Undoubtedly George was a novice, the new boy, the country operator, but he had a desire so indomitable that I knew nothing would stop him—and nothing did. After those first few moments of hesita-

Hustler Tribander 3-TBA

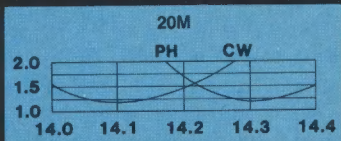
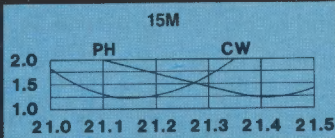
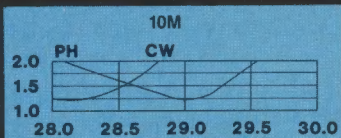
The Rugged, Reliable 10, 15, and 20-Meter Yagi You've Been Waiting for Is Now Available.

His exciting new tribander sets the pace for dependable performance with its two in one trap design — and the solid construction you've come to expect from Hustler. In fact, its durable design is partially based on concepts used in the time-tested and world-renowned Hustler 4-Band Trap Vertical.

The 3-TBA is the smallest full-featured tribander available today. It offers excellent front to back ratio and SWR at resonance. Plus, it is engineered to provide the widest possible bandwidths with superior power handling capacity.

A special heavy-duty saddle prevents mechanical distortion. Although light enough to ship UPS, and enable use of smaller, less expensive rotors, the 3-TBA can manage windloads up to 100 MPH! Its turning radius is only 14 feet.

All in all, you can't surpass the Hustler 3-TBA for top triband quality: Hustler — still the standard of performance.



For more information on this and other fine Hustler amateur radio products, contact:

HUSTLER®

3275 North "B" Avenue
Kissimmee, Florida 32741

An **AMERICAN** Company



Amid Palmyra's lush tropical vegetation, a tribander takes shape.



The operating position at AD05/KH5 with George and Bill hard at it.

tion, he sat in his chair making contact after contact nonstop, giving a new country to over three thousand stations before finally collapsing on the floor of the tent, ending forty-eight grueling hours without sleep. He awoke three hours later when I came ashore with fresh coffee, a hot meal, and a new supply of gasoline. A couple of hoarse comments passed between us, and after a sip of coffee and a new smoke, it was "CQ hello CQ," and he was back on the air, his breakfast untouched and growing cold beside the rig.

Yes, Kingman was a tough one. Tougher than Mellish or Spratly, and much harder than Palmyra or Tokelau. Not only was our foothold precarious, but the weather was always unpredictable, changing from sunshine and twenty-mph trade winds to storms which hit quickly after building for thousands of miles of open ocean.

The most frightening of these storms struck our first night ashore. The day had been quiet, but as the sun set, a breeze sprang up from the clear night sky. At first it was a cooling relief, but soon it began to build in jumps with gusts of thirty-five knots. As it increased, so did the tide until just at high water the horizon darkened with the advance of

brooding black thunderheads and the real storm began. The wind howled past gale force and the sea went crazy. Huge waves crashed over the barrier reef and pounded against our puny coral rock barricade. Salt-laden spume flew against the tent sides and was driven through by the torrent of rain. The inside of the tent was a horror scene. Gear was drenched and pools of water formed at our feet. At the storm's fullest fury, we were forced to bodily support the tent, and the harsh lighting showed our strain and fright as each man expected to be catapulted into the nearby lagoon by the next blast or breaker. Fortunately, the storm passed at dawn, and I hurriedly brought the larger tent ashore. Guy lines were doubled or tripled. Coral boulders were placed inside along the tent's periphery with an equal number around the outside to hold the tent in place.

Band conditions were fantastic with the big three always open to somewhere. The Ten-Tec Omni-C transceivers performed well, with such powerful bare-foot signals that they controlled the pileups with ease. But that is not to say that we didn't have equipment problems. Bill had forgotten his earphones, and mine were so uncom-

fortable and tinny that we were forced to go without. George's Autek filter shorted out during the first night's storm, as did his new DenTron linear. He straightened out the Autek by changing a couple of the ICs, but the DenTron never even got looked at.

The biggest problem was the wash-over between the two stations. At first we thought it was insufficient grounding and ran extra wires into the sea. Then we blamed the broadness of the tribanders, but in the end we accepted it as a shortcoming in the transceivers. Most of the time it wasn't a problem, since George had priority with his skill at pulling callsigns out. At the worst times, it was terribly frustrating for Bill and me as we'd wait and then yell, "Go now! He's not transmitting!"

Considering that this was Kingman and one of the most difficult DX locations in the world, everything went amazingly well. All bands were covered except 160 meters, which was absolutely dead. Once again it was proven to me that the time used to search out the twenty-seven 80-meter and the ten 6-meter contacts would have been far better used to give many other stations the new country on the higher bands. More time was lost with incon-

siderate operators who grabbed two, three, and even four contacts on the same band and mode, stealing the contact from hundreds of others. Why can't all DX operators learn that expedition time is precious? Asking for QSL information and forced chit-chat during a pileup only breaks the stride of the operator. They could have listened a while for QSL and band-change information.

We also had the usual number of weirdos fanning their egos by whistling, mooing, and breathing heavily into the mike. Plus we had one particular crazy who obscenely attacked Bill and then George. It saddened and embarrassed us to hear such crude talk, and, as it happened, both my wife and children were listening, too!

On the brighter side, US operators proved the easiest to work as long as we worked each district fairly. JAs and European operators were frantic and sometimes unruly, while the South Americans politely got their share. And lastly, my coppers from down under were still the same: callsign, name, signal report, and 73, all at a two-a-minute rate.

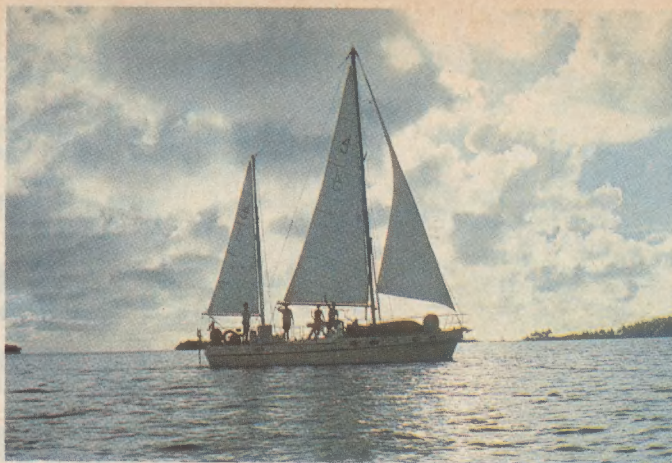
A total of 12,176 QSOs were logged. The last one went into the book at 1457Z April 22, five days and four-

teen hours after we began. Not surprisingly, it was between George and Mike AFØT, with a "job well done" message from Minnesota. It *had* been a job well done, for George had logged 66% of the total contacts. His beam heading had never moved, and a whopping 80% of his contacts were with North Americans. The total breakdown per area was: North America—74%, JA—15%, VK/ZL—4%, and the rest of the world—7%.

We shut down in the wee hours of Wednesday morning, extremely happy and proud of our combined efforts. We sat at the door of the tent and watched the dawn break over the stark beauty of Kingman—we felt an immense bond of comradeship. We planned to spend one day breaking camp and repacking the boat, and sail the following day for Palmyra. That would allow us enough time to be established at Palmyra for the weekend.

And that's just what we did. After the last box came aboard at midday, George and Bill collapsed. They woke briefly for dinner and then hit the sack once more to sleep the night through. Early pre-dawn Thursday morning, the hundreds of pounds of anchor and chain slowly rose from the ocean's depths, needing three hours of coaxing by the ship's anchor winch. By first light we were under sail and heading for Palmyra, forty-five miles away.

That sail was terrible, and seas knocked us about, but by twilight we were in. We located the airstrip and the crashed plane from a previous ill-fated expedition. We moored right alongside the sea-plane ramp and stepped directly on shore. It was a great DX spot and we would have really appreciated it had it been our first or only stop. But it wasn't, and we were simply DXed



The S.Y. Banyandah in search of new adventures.

out, spent, and a little homesick, with a two-week voyage separating us from family and friends. Furthermore, we didn't expect much of a demand since the previous visitor had logged big thousands of contacts. For us, there was simply no challenge at Palmyra; it appeared nothing more than a deserted holiday camp—quite a comedown after the herculean task of activating Kingman.

Setting up camp the next morning was a breeze. We merely walked along the ramp with our gear, boat to shack—the old bunk house for flying boat service personnel. We ran our power supply straight into the building's fused junction box and had lighting at the flick of a switch. An old refrigerator also came to life and soon we even had cold beer. Ah! What a life! A gorgeous view out onto a peaceful lagoon ringed by islands alive with swaying palm trees and a DX station ready to tackle any pileup. Unfortunately, our mood, the mosquitos, and the rats which infested our shack all combined to sour the dream.

George and Bill were on the air by 2116Z that same morning—after a mere four hours to set up. The pileups were there, all right, but not the kind that shoot adrenaline into your veins as you fight to keep them under

control. They died out so quickly that we even shut down for dinner.

During the Palmyra mornings, we all relaxed, fished, or explored the islands. In the afternoons and evenings, George and Bill worked DX while Judith and I prepared the boat for the fourteen-hundred-mile voyage to Pago Pago.

Propagation worsened while the longing for home grew stronger; finally, we closed the station after making the last contact at 0341Z April 29. The total number of contacts logged was 5,320. The breakdown per area was almost identical to that for Kingman.

The rest of the adventure was sort of mundane; a celebration dinner that night, a slow and careful packing up of the boat the next day followed by a refreshing final shower from one of the numerous rainwater storage tanks, and then a long sail halfway across the Pacific to American Samoa. For eleven days, the horizon remained empty. No ships, no aircraft, nothing but a fifteen-mile-diameter visible circle of sea. Finally, at 0930 hours on the twelfth day, from Palmyra and the thirty-fourth since leaving Hawaii, the 2,141-foot peak of Matafao on American Samoa pierced the skyline and the great adventure began its last act.

We rounded the island's eastern tip just after lunch and sailed along its southern shore, feasting our eyes on the greens and yellows while savoring the aroma of land. It was a quiet, easy sailing day and George stood in the companionway describing the lush jungle, quaint villages, and dilapidated buses to Gwen, his wife, who was on the patch.

We entered Pago Pago harbor marveling at the beauty of the gorge and holding our noses from the smell of the fish factory. The anchor went down, the authorities were notified, and the vessel was cleared. That night the final rites for this unique experience were held at a nearby restaurant where we stuffed ourselves on steak and salads. Two days later, George and Bill were gone, and the 1981 Kingman/Palmyra DXpedition became a memory.

The expedition cost \$10,000 not including airfares, hotel bills, and miscellaneous shore expenses. Of that, \$4,740 is still owed to the boat. Most of that will probably have to be written off since our efforts at obtaining post-operation sponsorship died in a flurry of kind words. To date, with nine thousand cards received, little will be left after postage. In fact, we had great plans for a beautiful and dramatic full-color QSL card, a fitting tribute to the achievement, but even this had to be replaced with a two-color card as there just wasn't any money for it.

Nevertheless, it was a true chunk of adventure; it is a memory of achievement, comradeship, and beauty to hold the rest of our lives. And as George recently said, "I don't know when or how, but I'm going to do Kingman again!"

Written on board the S.Y. Banyandah, Wallis Island, South Pacific, 1981. ■